

Breeding of a blue + a red flower,
taking 8 chromosomes + only color genes.

2. Diploid no. of chromosomes changed to haploid no. by reduction division - each sex cell of either plant receiving 1 homozygous chromosome.
3. By fertilization a purple flower is formed by the sex cell of a blue flower meeting the sex cell of a red flower. Diploid no. restored.
4. By reduction division of heterozygous individuals, 2 gametes are homozygous for red, 2 for blue.
5. By fertilization 1 flower is:
 - 1 homozygous red.
 - 1 homozygous blue.
 - 2 heterozygous purple.

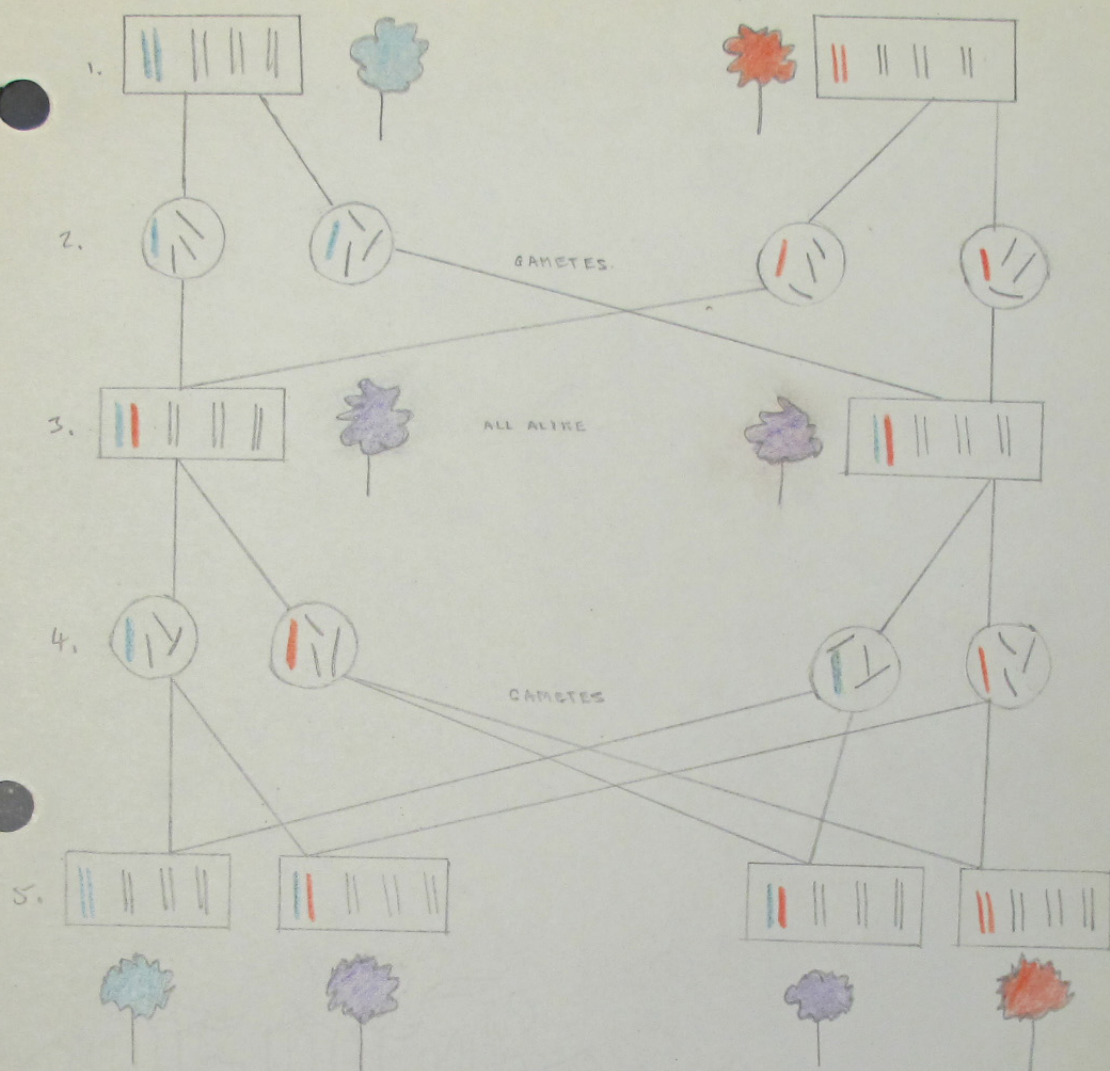
Homozygous - same genes.

Heterozygous - one dominant gene.
one alike + one different.

Recessive - does not show in a heterozygous person.

Dominant - can be seen.

HYBRIDIZATION OF A BLUE FOUR-O'CLOCK WITH A RED ONE.



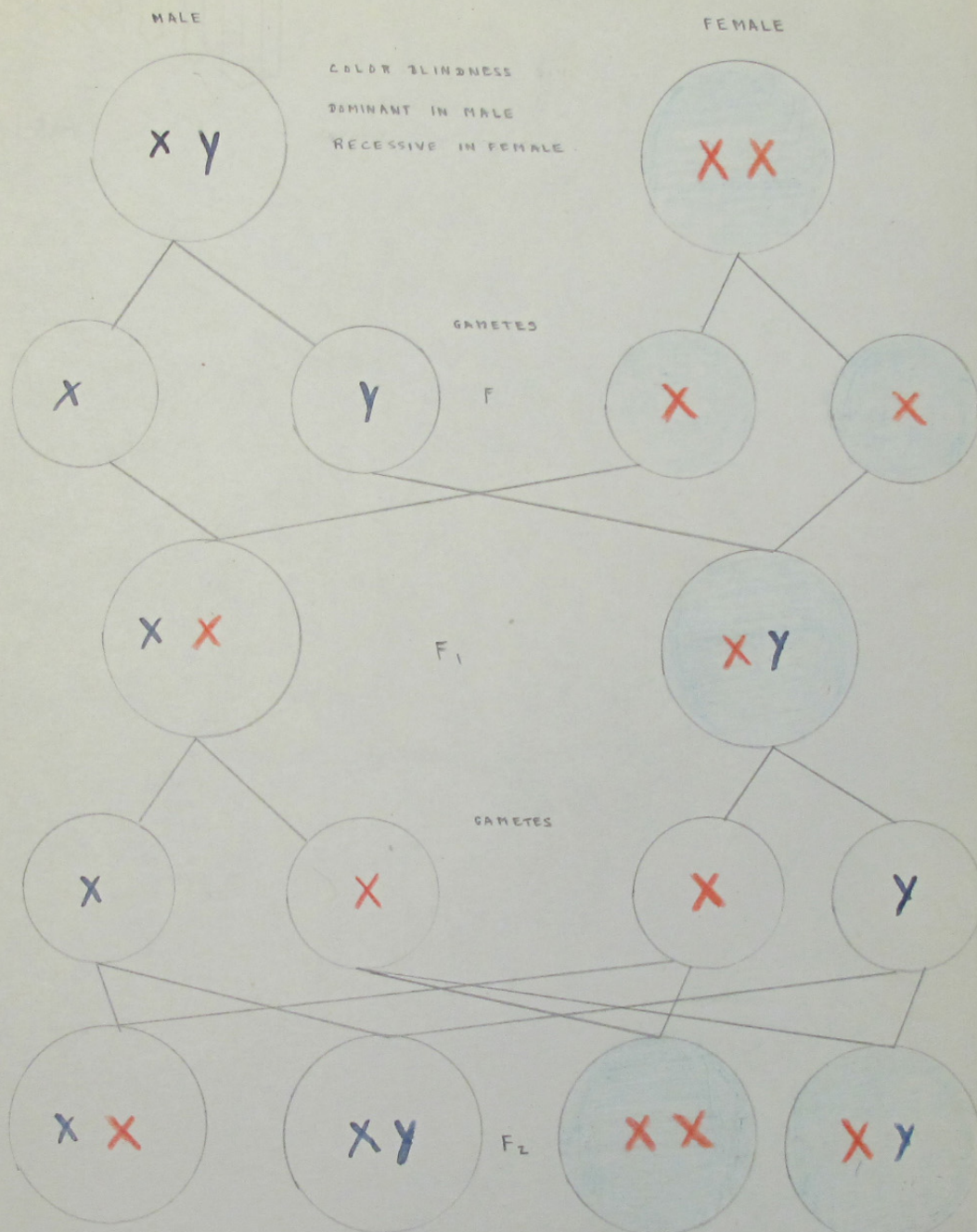
BY THIS FERTILIZATION

1 HOMozyGous BLUE FLOWER

1 HOMozyGous RED FLOWER

2 HETEROzyGous PURPLE FLOWERS.

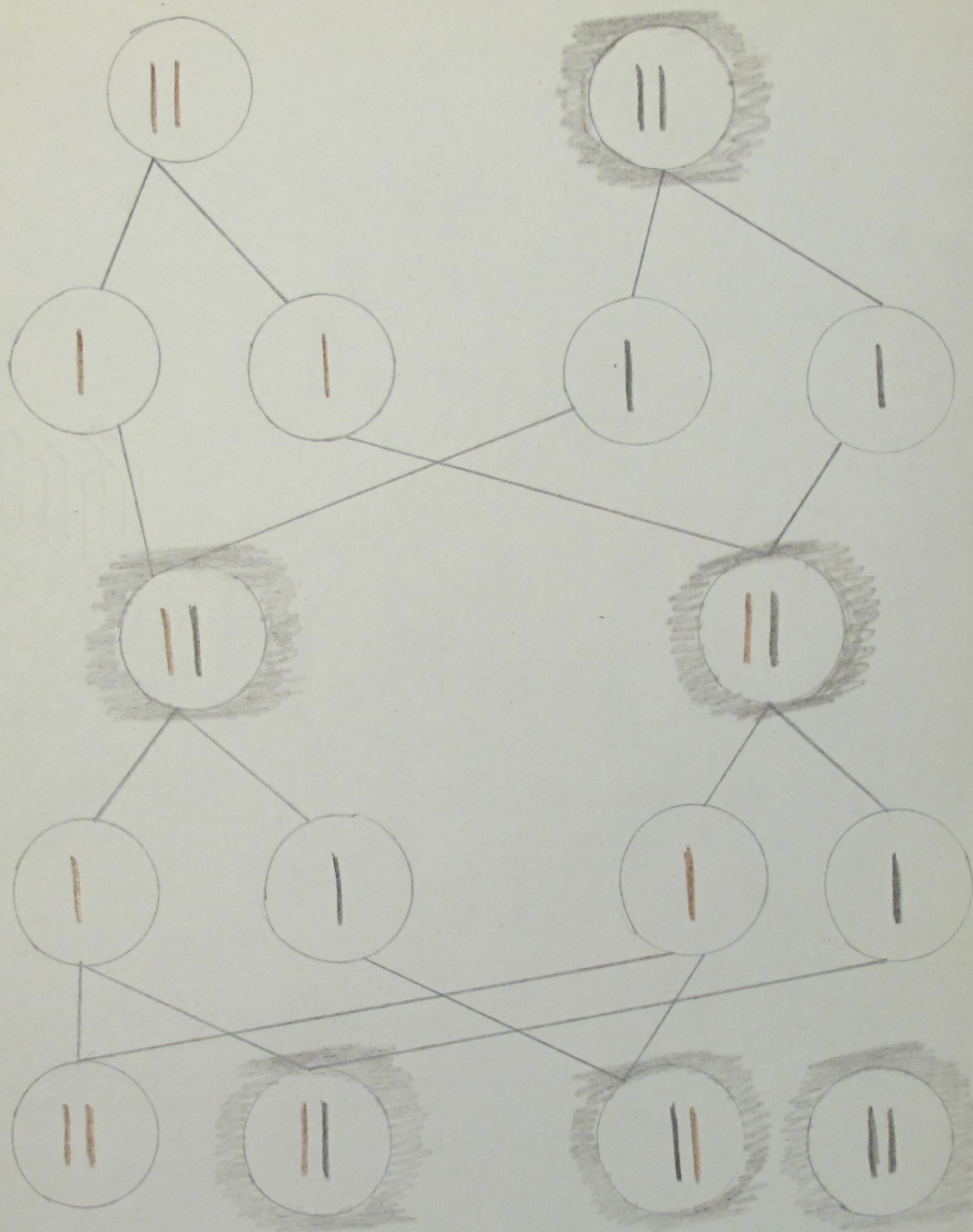
INHERITANCE OF COLOR BLINDNESS.



WHEN FEMALE IS COLOUR BLIND & MALE IS NORMAL - SONS PRODUCED ARE COLOUR-BLIND
DAUGHTERS NORMAL BUT CARRY GENE FOR COLOUR BLINDNESS.

IF MEMBERS OF F₁ GENERATION MARRY - ONE HALF THE DAUGHTERS & HALF THE
SONS ARE COLOUR-BLIND.

HYBRIZATION OF A BROWN AND BLACK GUINEA PIG.

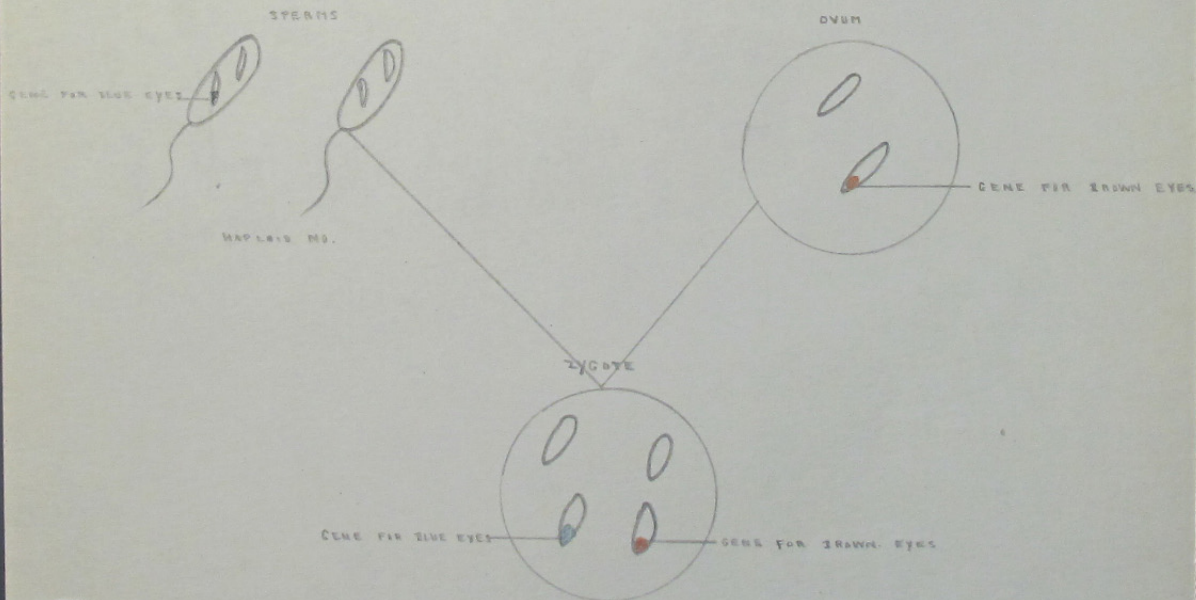
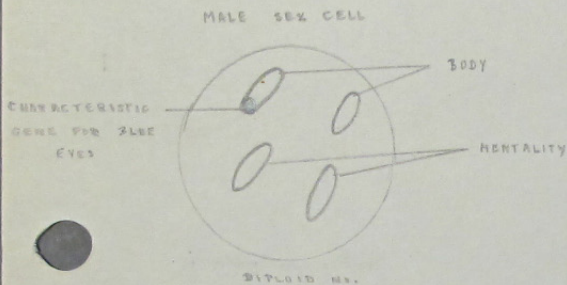
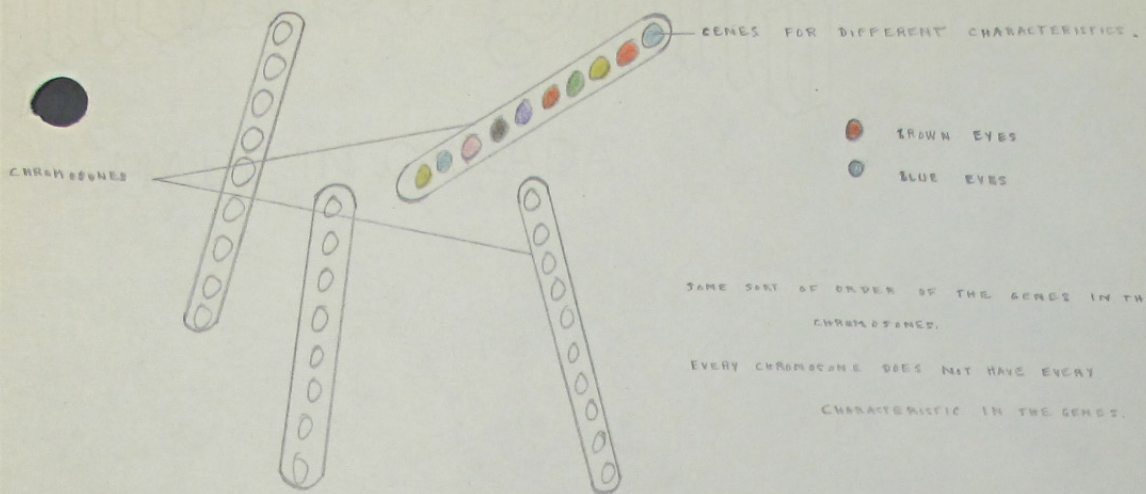


BY THIS FERTILIZATION

1. HOMOZYGOUS BROWN GUINEA PIG
1. HOMOZYGOUS BLACK GUINEA PIG
2. HETEROZYGOUS BLACK GUINEA PIG

BLACK IS DOMINANT.
BROWN IS RECESSIVE

THE GENE THEORY OF HEREDITY.



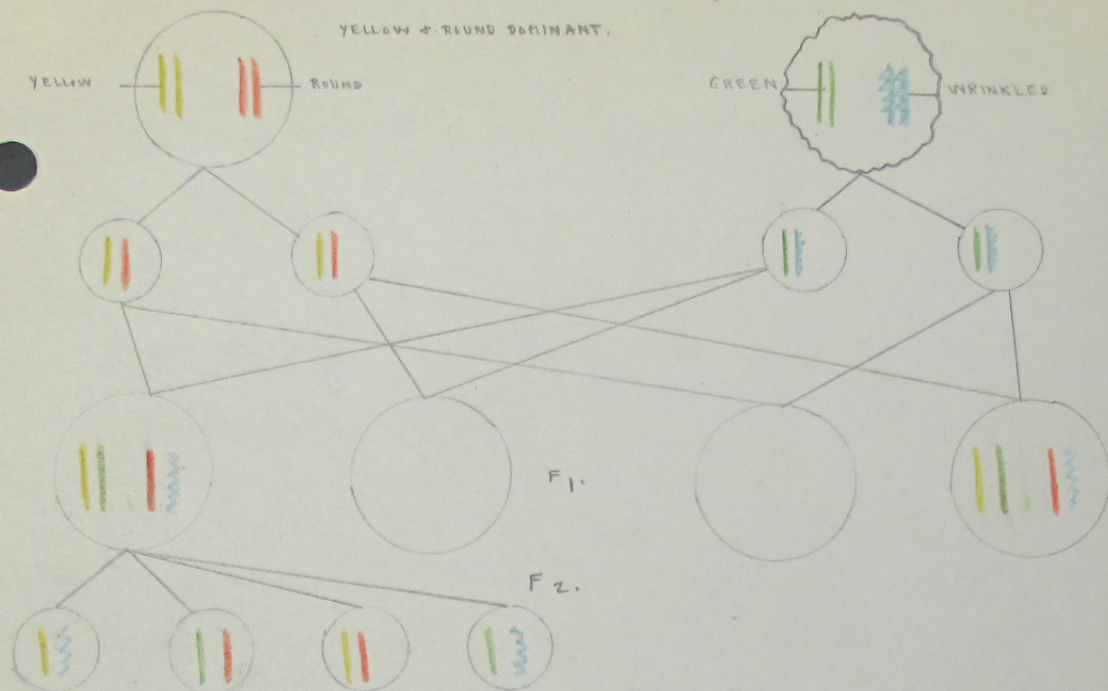
THE INDIVIDUAL WOULD HAVE BROWN EYES, AS BROWN IS DOMINANT OVER BLUE.

IF BOTH SPERM AND OVUM HAD BROWN GENES - THE INDIVIDUAL WOULD HAVE BROWN EYES.

HOMOZYGOUS - BOTH GENES ALIKE

HETEROZYGOUS - GENES ALIKE BUT DIFFERENT.

HYBRIDIZATION OF A YELLOW ROUND WITH A GREEN WRINKLED PEA.



HOMOZYGOUS ROUND YELLOW 1

HOMOZYGOUS ROUND GREEN 1

HOMOZYGOUS WRINKLED YELLOW 1

HOMOZYGOUS WRINKLED GREEN 1

HETEROZYGOUS ROUND YELLOW 2

HETEROZYGOUS WRINKLED YELLOW 2

HETEROZYGOUS ROUND GREEN 2

HETEROZYGOUS WRINKLED GREEN 0



ROUND 12

WRINKLED 4

GREEN 4

YELLOW 12

ROUND & YELLOW 9

ROUND & GREEN 3

WRINKLED & YELLOW 3

WRINKLED & GREEN 1

Chapter III

Genetics + Human Inheritance

Somatoplasm - cells that give rise to the body.

Germplasm - cells that are found in the sex glands for reproduction.

Each chromosome contains a no. of genes arranged in lines. Genes of each chromosome differ in no. + kind.

Chromosomes split lengthwise in mitosis - genes are divided evenly, each cell receives one of each homologous pair of genes.
both genes alike.

homologous - both genes alike.

homozygous for a certain factor is having the same gene in both homologous chromosomes.

heterozygous - having different genes in chromosomes.

gamete - the sperm & the ovum.

Good environment essential, helps resist disease, even though person is susceptible.

Immunity sometimes by injection.

Hereditary - Criminal career might be attributed to genes or to environment. All traits

inherited if not conditioned by development & environment. Very few characteristics controlled by single pair of genes. Several sex-linked factors produce undesirable traits.

Sex Inheritance.

X chromosome carries sex factor in sex cell.

Man has 46 autosomes, 2 sex chrom.

Woman - 2 X chromosomes.

Man - 1 X chromosome.

1Y "

In reduction division, if X chromosome of female meets Y chromosome of male, a boy is produced.

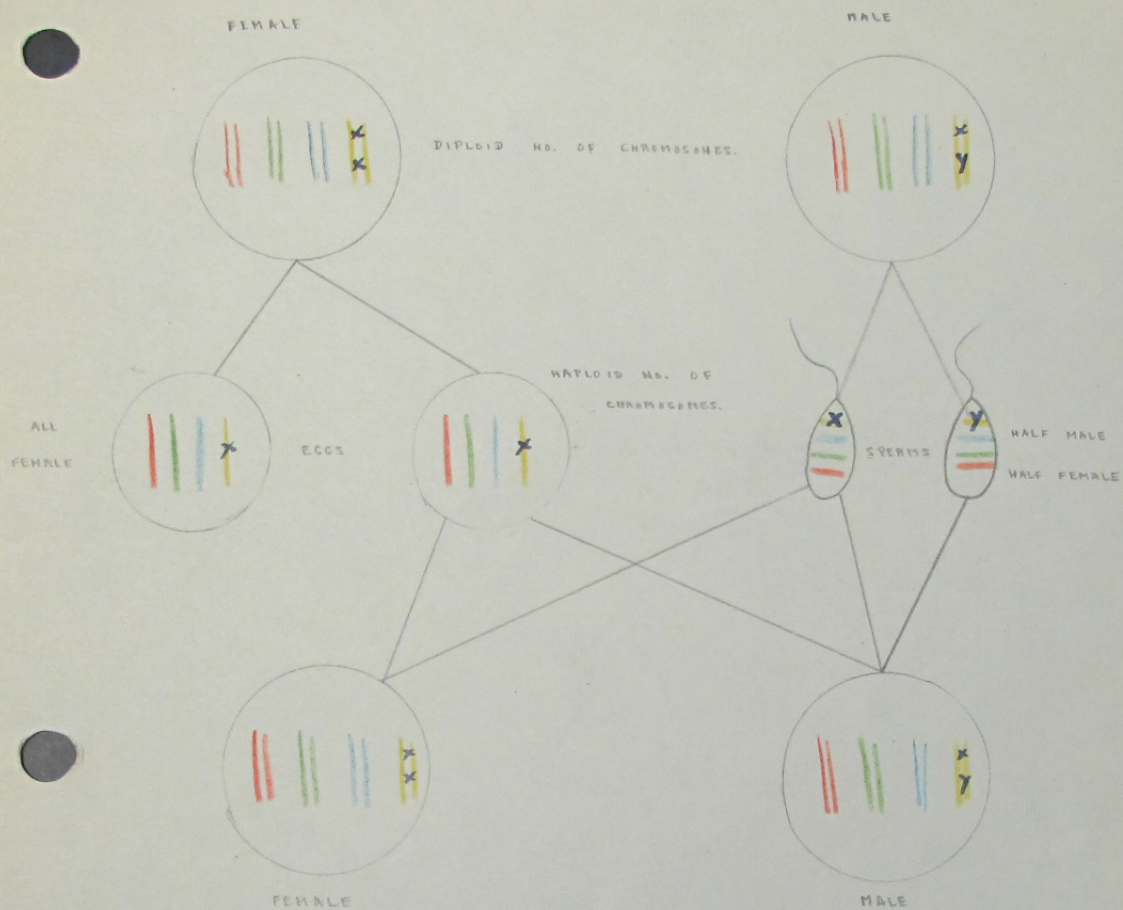
If X chromosome of female meets X chromosome of male, a girl is produced.

Sex linkage.

All factors in X chromosome are inherited together & sex linked.

Y chromosome has very few genes.

SEX INHERITANCE.



MALE DOMINANT.

eg. color + night blindness, hemophilia.
Deafblindness inherited + recessive.

Phychois - recessive.

Melancholia. St. Vitus Dance recessive.

Diabetes, eye-color, dominant + inherited.

Inherited susceptibility to disease.

Eugenics - closely related persons should not marry + they contain similar genes, which may come out in homozygous condition in the progeny. Members of different families having similar fault shouldn't marry.

Nature of the gene - rearrangement of their chemical constitution may produce mutations.



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